ACKNOWLEDGMENT

Our Thanks to the Schering Corporation

We recognize with appreciation the Schering Corporation for pledging support to the Endowment Fund for The Journal of Investigative Dermatology, *which will be used to support the growth and continued success of the Journal. This support will certainly strengthen and perpetuate the partnership between the pharmaceutical industry and basic and clinical investigators in cutaneous biology.*

We salute the Schering Corporation for their contribution to the Endowment Fund and for their continued support of clinical and investigative dermatology.

D.A.N., Denver, CO

In This Issue . . .

Jean L. Marx

Skin Graft Rejection Suppressed by Vaccination with T Cells

In this issue, Maritza Perez, Richard Edelson, Liliane Laroche, and Carole Berger of Yale University School of Medicine in New Haven, Connecticut, and Columbia University in New York City report the discovery of a new type of vaccination that may be useful for preventing unwanted immune responses, such as those causing the rejection of transplanted organs or autoimmune diseases. Perez, Edelson, and their colleagues have shown that they can take the T cells that mediate such an undesired immune attack, in this case the rejection of skin grafts by mice, and effectively turn the cells on themselves, so that they cause the immune system to suppress the responses that would otherwise destroy the skin grafts. The method may be applicable for treating autoimmune diseases, such as systemic lupus erythematosus, pemphigus vulgaris, and multiple sclerosis, as well as for inhibiting the rejection of transplanted organs.

The current study is an outgrowth of previous work in which Edelson and his colleagues devised a new therapy for cutaneous T-cell lymphoma. In this therapy, blood lymphocytes are first recovered from the patients. These cells contain a high proportion of the T cells that are growing out of control and causing the lymphoma. The lymphocytes are inactivated by exposing them to 8-methoxypsoralen (8-MOP) and ultraviolet light A (UVA) and returned to the patients. This treatment causes the lymphoma to regress, apparently by triggering an immune attack on the lymphoma cells. "The T cells that have been so exposed (to 8-MOP and UVA irradiation) appear to induce an immune response against themselves and others like them," Edelson says.

Perez, Edelson, and their colleagues devised a mouse skin-graft model to test whether the T-cell therapy works in the way postulated. They prepared cells from the spleens of mice that were rejecting a foreign skin graft. The spleen cells, which should be enriched in the T cells causing the rejection, were also inactivated by exposing them to 8-MOP and UVA, and then injected into mice of the same strain as the cell donors. These mice, when subsequently given skin grafts, proved to be tolerant to the foreign tissue, even though it was of the same genetic type as the grafts that originally elicited immune rejection. "All of these animals retained the grafts past 15 days," Perez says, "while all the controls rejected theirs in seven days."

In vitro assays of immune cell function in the mice that had received the treated spleen cells suggested that the animals were making immune cells that suppressed the graft rejection response. This is in accord with the Edelson group's hypothesis about how the therapy for cutaneous T-cell lymphoma works. Lymphocytes that have been exposed to 8-MOP and UVA apparently elicit the production of suppressor cells that act in the one case against the lymphoma T cells and in the other against the T cells that elicit skin graft rejection.

Edelson notes that T-cell vaccinations comparable to those used for treating cutaneous T-cell lymphoma are beginning to be tested as therapies for a variety of autoimmune diseases that are thought to be caused by aberrant T-cell activities. The current study, he says, "doesn't answer all the questions, but it demonstrates a scientific basis for the clinical responses being observed."

New Clues to How Ultraviolet Light Causes Tanning

"Our goal in these studies is to try to understand how the signal from ultraviolet light is transduced into a chemical signal that results in melanization," says John Pawelek of Yale University School of Medicine in New Haven, Connecticut. The changes that lead to the tanning of skin had been thought to be a response to the cellular injury caused by ultraviolet light. But, Pawelek explains, those changes occur in such a highly reproducible manner—the same way every time for everybody—that tanning appears to be more closely regulated than it would be if it were only a generalized response to injury.

In this issue, Pawelek and Jean Bolognia and Marilyn Murray, also of Yale, provide new evidence in support of the idea that melanization in response to ultraviolet B (UVB) irradiation is regulated in a specific fashion, through the activity of melanocyte stimulating hormone (MSH). The researchers have found that mouse melanoma cells acquire an increased ability to bind MSH after they are

0022-202X/89/$03.50